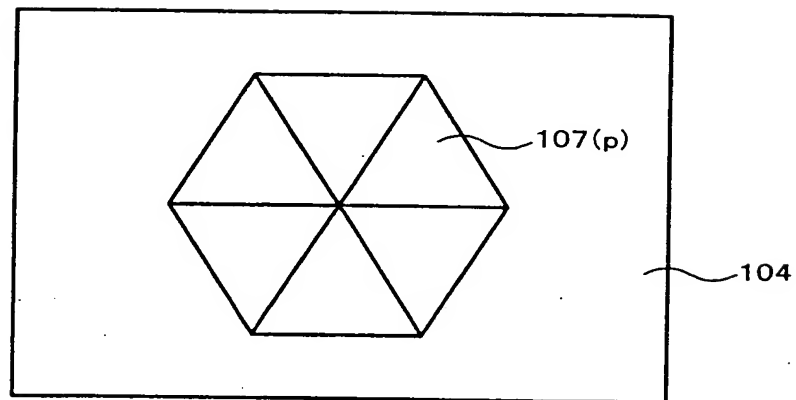
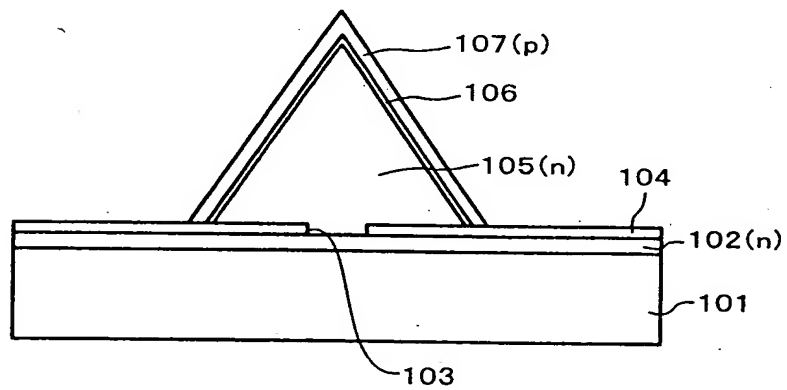
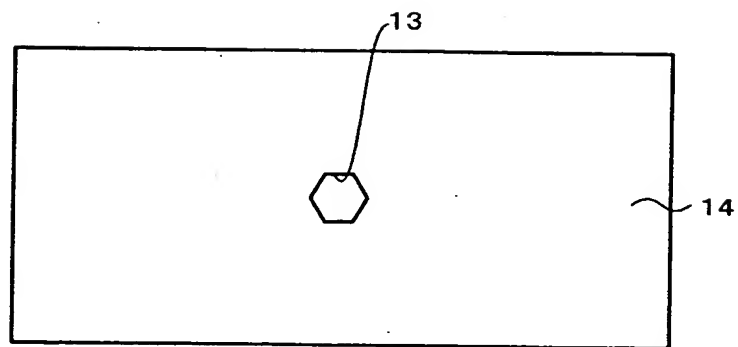
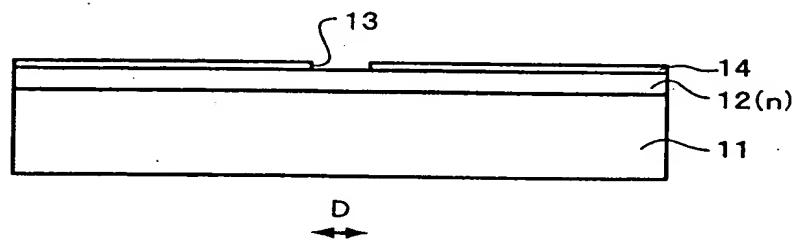


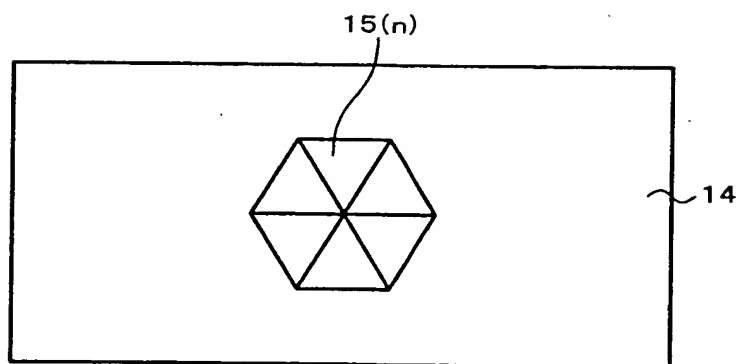
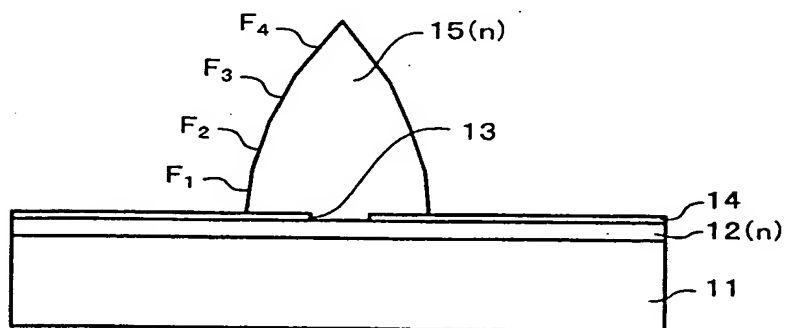
**Fig. 1A**



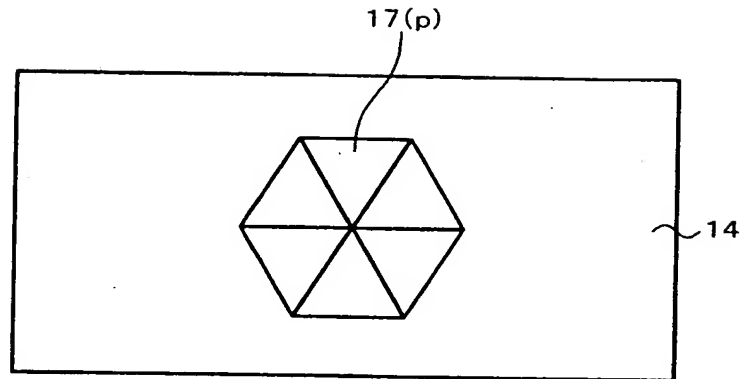
**Fig. 1B**



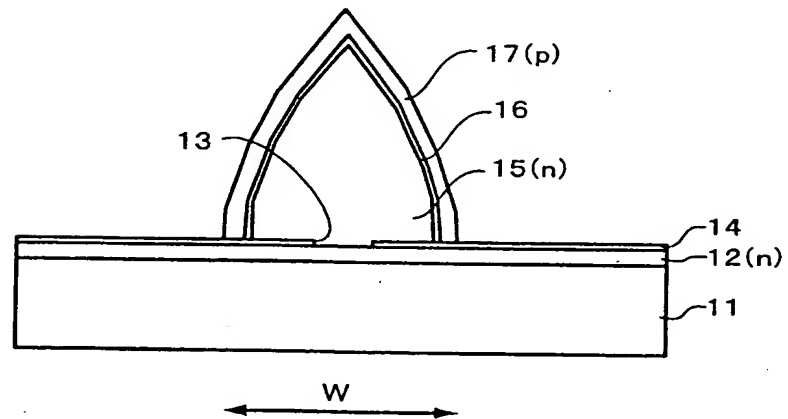
**Fig. 2A****Fig. 2B**

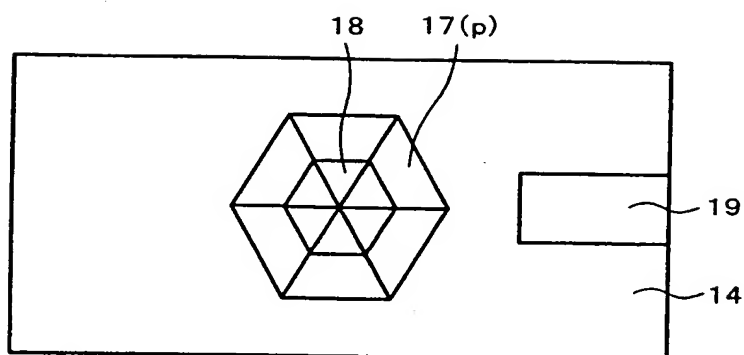
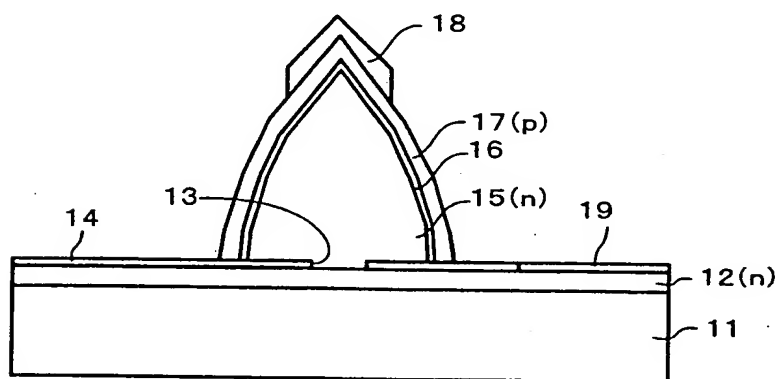
**Fig. 3A****Fig. 3B**

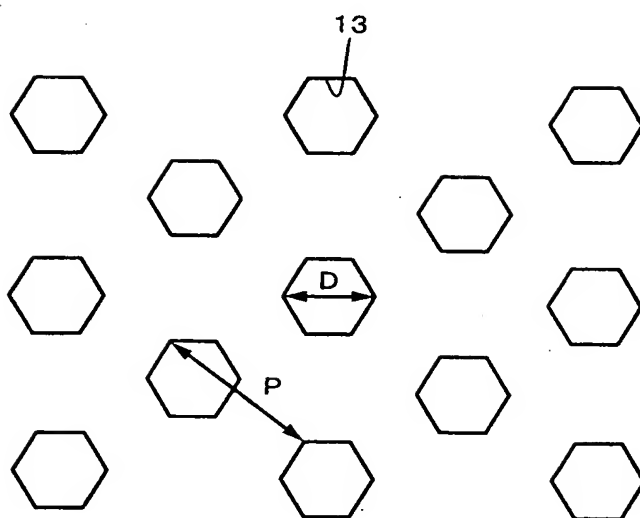
**Fig. 4A**



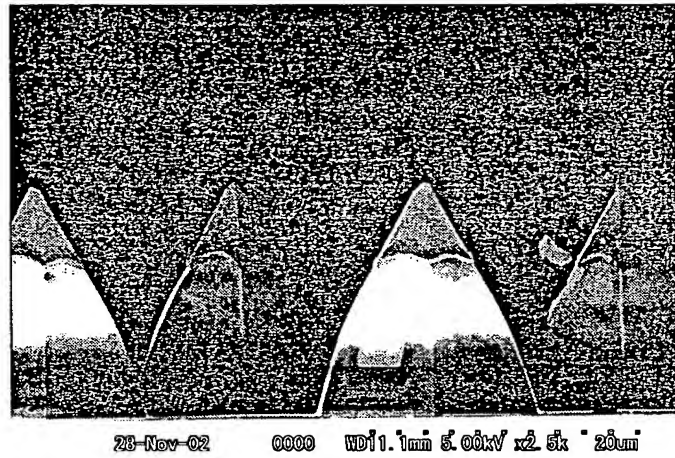
**Fig. 4B**



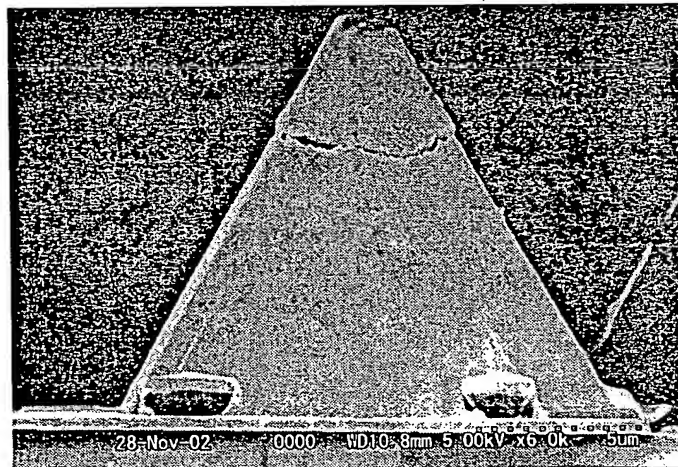
**Fig. 5A****Fig. 5B**

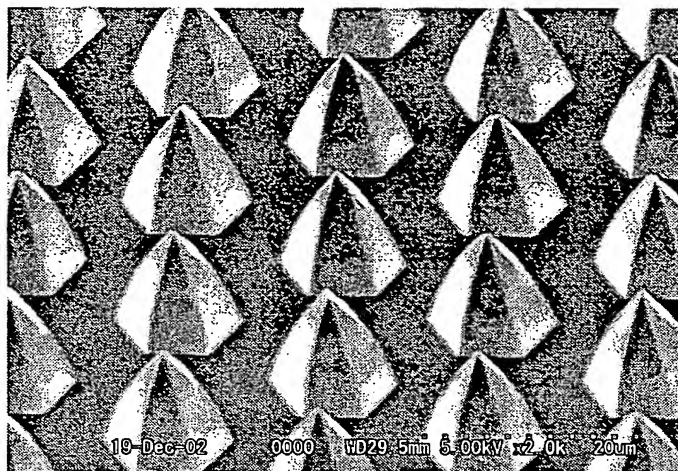
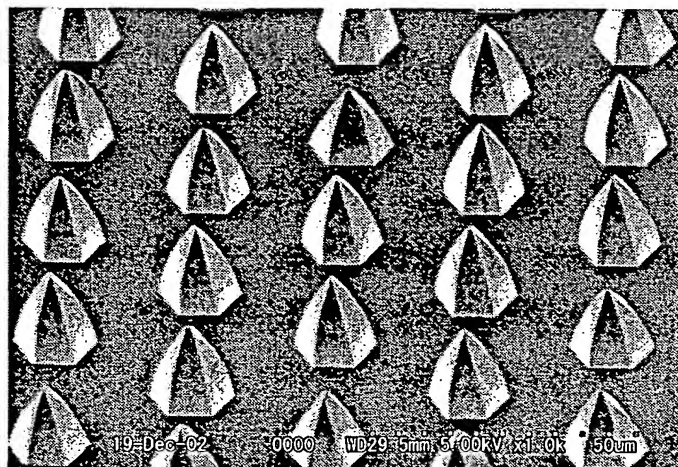
**Fig. 6**

**Fig. 7**

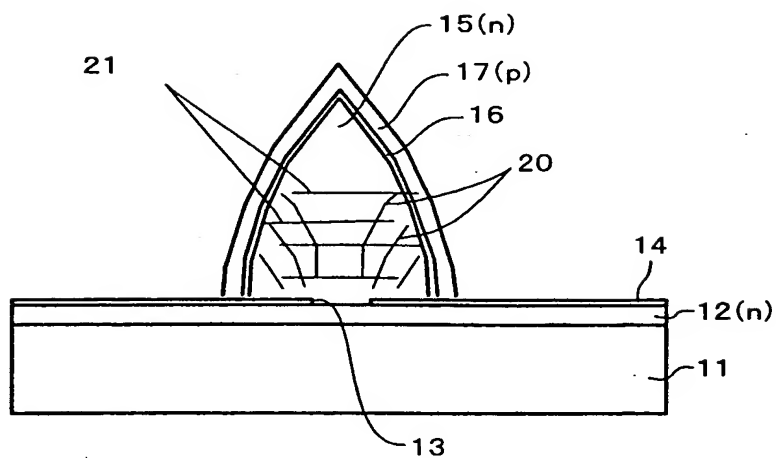
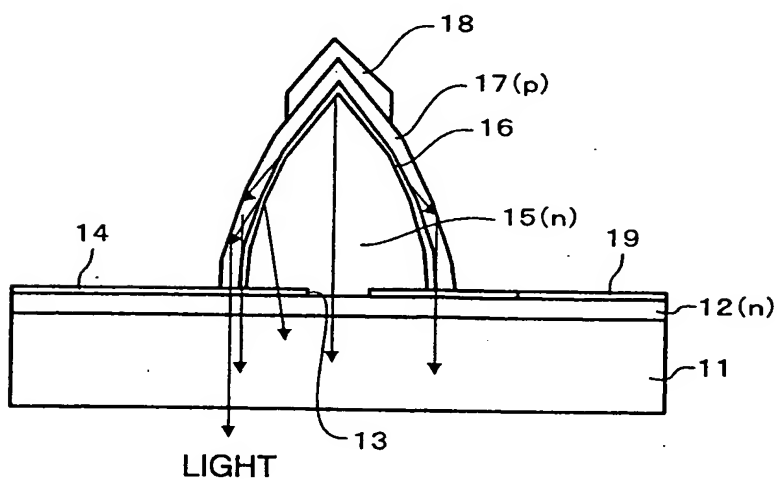


**Fig. 8**

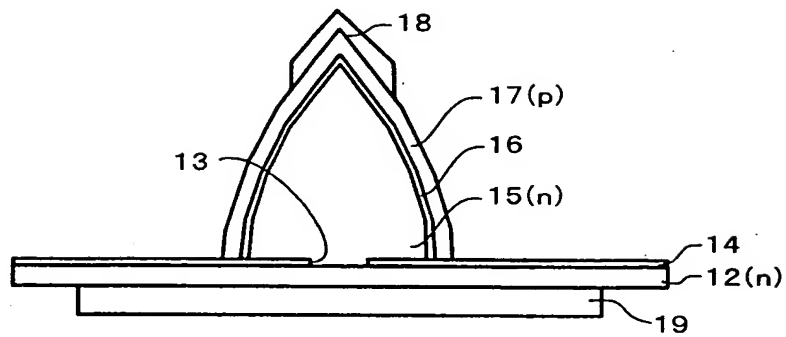


**Fig. 9****Fig. 10**



**Fig. 11****Fig. 12**

**Fig. 13**



**Fig. 14**

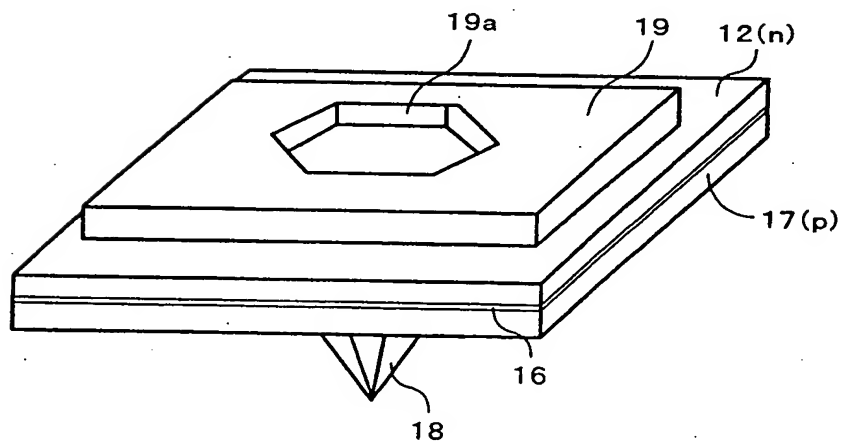
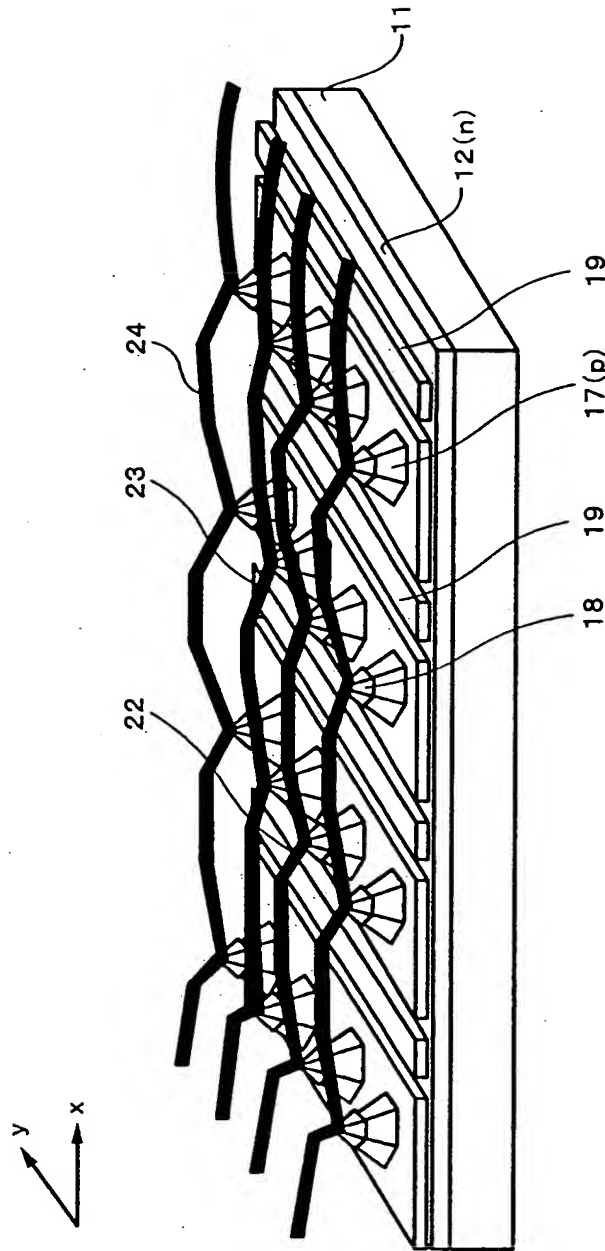
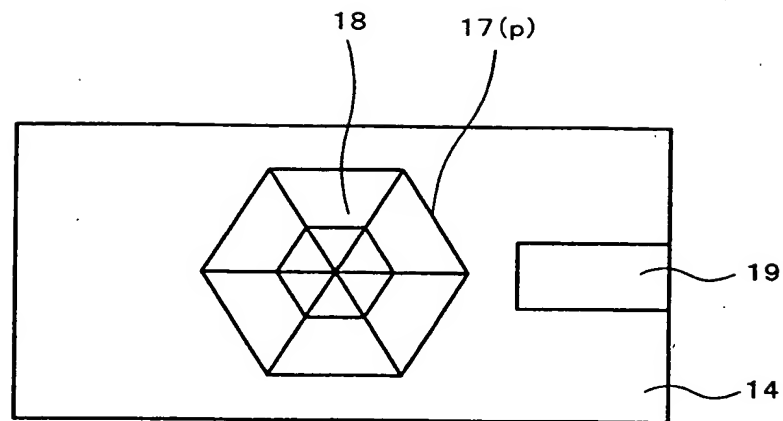
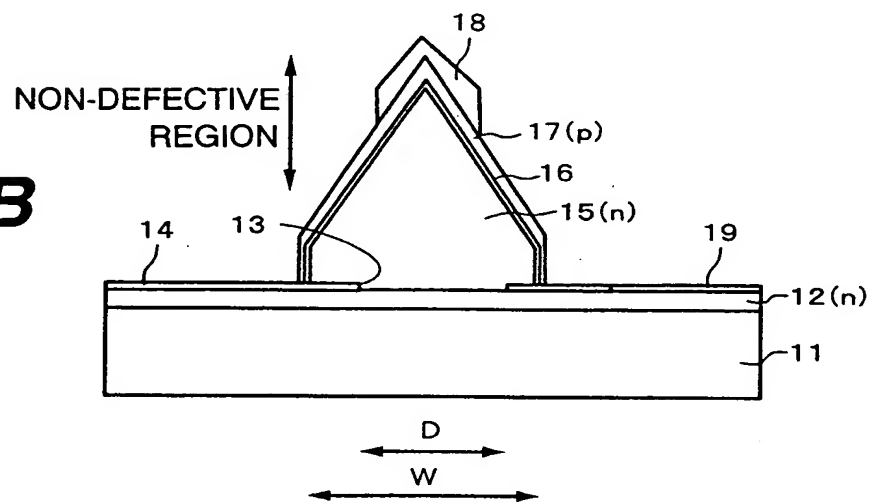


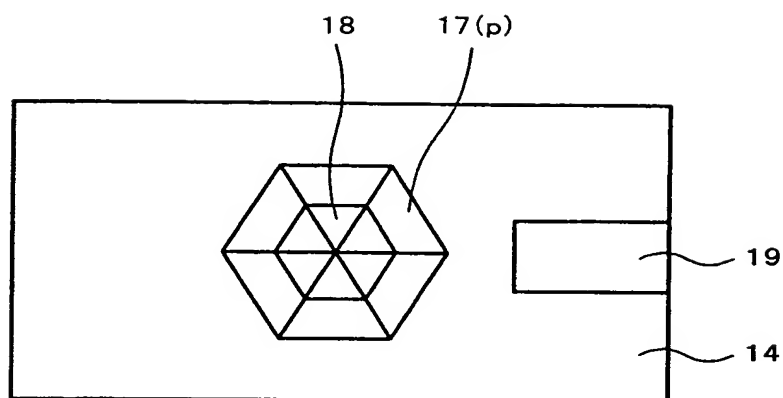
Fig. 15



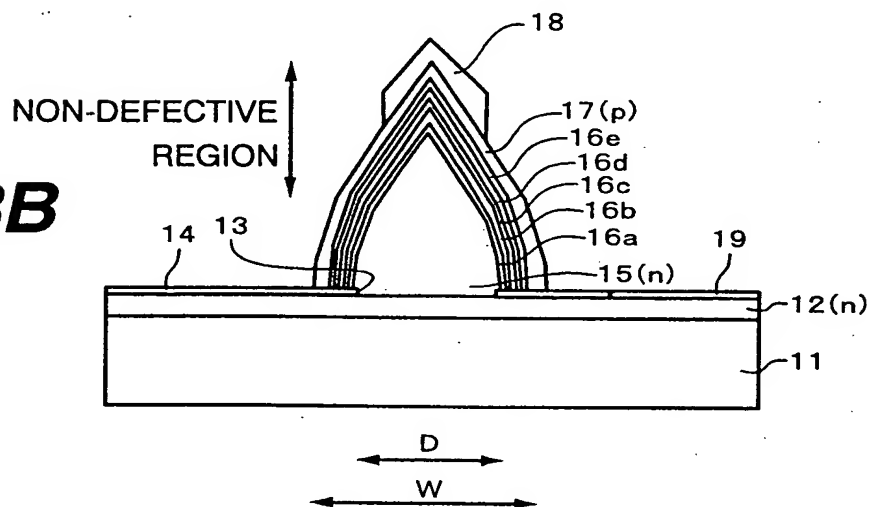


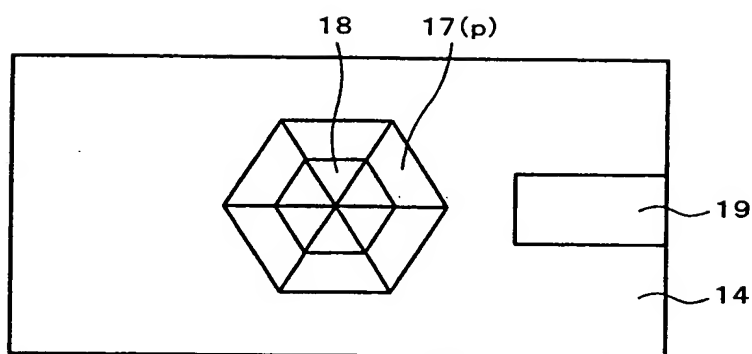
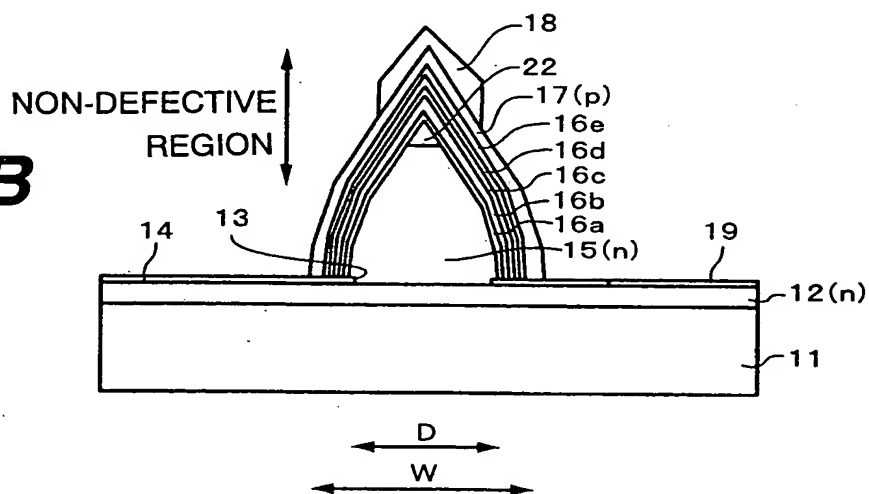
**Fig. 17A****Fig. 17B**

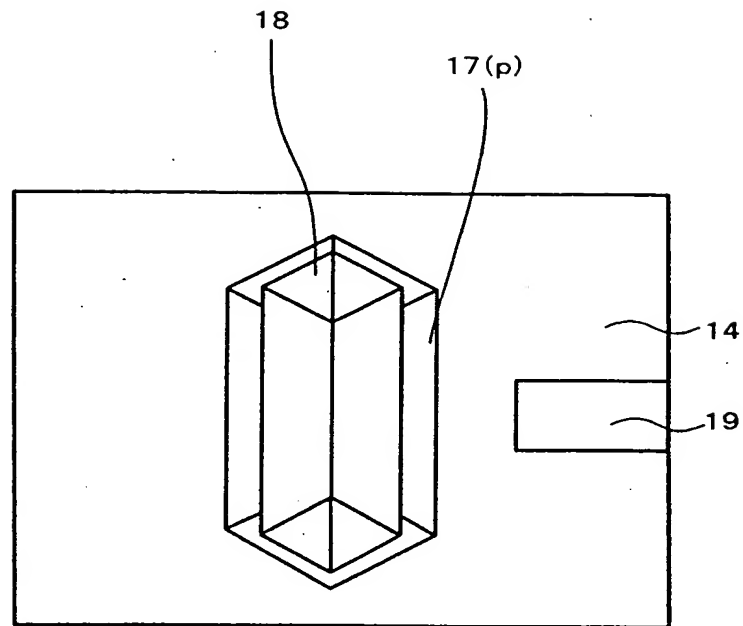
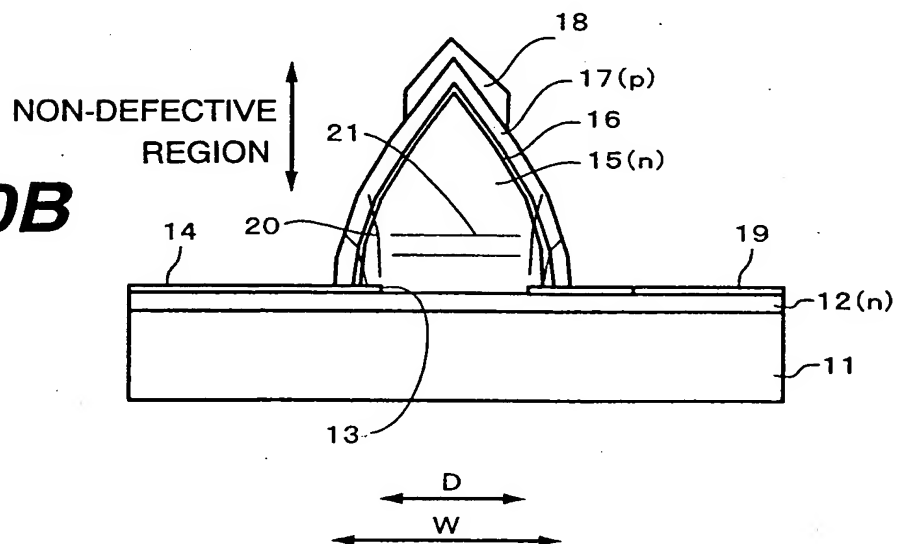
**Fig. 18A**



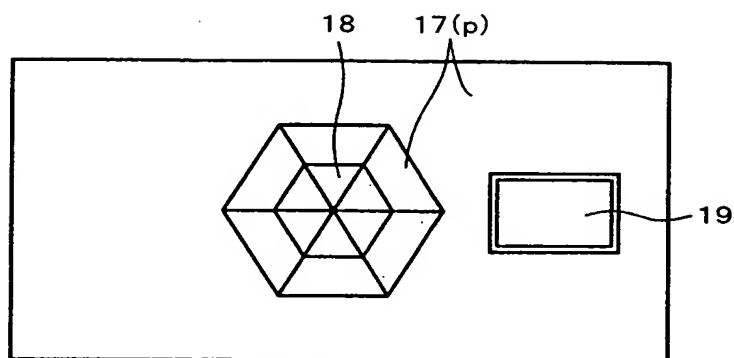
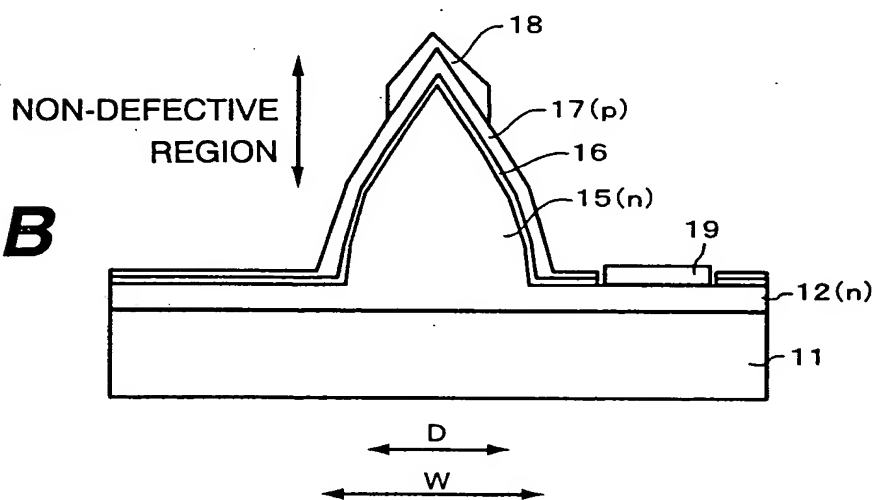
**Fig. 18B**



**Fig. 19A****Fig. 19B**

**Fig. 20A****Fig. 20B**



**Fig. 21A****Fig. 21B**

DESCRIPTION OF REFERENCE NUMERALS

- 11      SAPPHIRE SUBSTRATE
- 12      n-TYPE GaN LAYER
- 13      OPENING
- 14      GROWTH MASK
- 15      n-TYPE GaN LAYER
- 16      ACTIVE LAYER
- 17      p-TYPE GaN LAYER
- 18      p-SIDE ELECTRODE
- 19      n-SIDE ELECTRODE